Abstract

This paper presents a new advanced control algorithm for Concentration tracking of a continuous stirring tank reactor (CSTR). This algorithm called: Neural Network Approximate
Generalized Predictive Control (NNAPC) that uses a combination of Artificial Neural Network (ANN) with Approximate Generalized Predictive Control technique (APC). This algorithm is based on the use of ANN as a nonlinear prediction model of the CSTR. This modeling technique is done by using the data from the system input/output information without requiring the knowledge about CSTR parameters. The outputs of the neural predictor are the future values of the controlled variables needed by the optimization algorithm. Simulation results show the effectiveness of the proposed control method.

Reference


Index Terms

Computer Science Control Systems
Key words

Continuous Stirring Tank Reactor (CSTR)  Approximate
Generalized Predictive Control (APC)

Artificial Neural Network (ANN)